Episode 148 Transcript

00:00:00:02 - 00:00:07:22
Mark Newman
Herbs and supplements and things like that are powerful. But pharmaceutical intervention, you know, usually can't be matched that way. And that is a two edged sword.

00:00:08:00 - 00:00:33:09
Dr. Jaclyn Smeaton
Welcome to the DUTCH podcast, where we dive deep into the science of hormones, wellness and personalized health care. I'm Doctor Jaclyn Smeaton, chief medical officer at DUTCH. Join us every Tuesday as we bring you expert insights, cutting edge research, and practical tips to help you take control of your health from the inside out. Whether you're a healthcare professional or simply looking to optimize your own well-being, we've got you covered.

00:00:33:11 - 00:00:58:08
Dr. Jaclyn Smeaton
The contents of this podcast are for educational and informational purposes only. This information is not to be interpreted or mistaken for medical advice. Consult your health care provider for medical advice, diagnosis and treatment. Hi there! Welcome to this week's episode of the DUTCH podcast. I'm really thrilled you're joining me today because we have our founder and CEO, Mark Newman, on the pod to talk about a recent publication that we put out in October of 2025.

00:00:58:10 - 00:01:19:19
Dr. Jaclyn Smeaton
This is a really cool publication because it's a case study. It follows a clinical case of a patient, and it's actually Mark and follows it through what happens for a patient who wanted to support testosterone. In this case, the patient was given hCG. But we get to see a baseline with a low level of testosterone. And then the addition of hCG and then several rounds of supplements.

00:01:19:19 - 00:01:42:10
Dr. Jaclyn Smeaton
And he tested after each round. So what's so cool is you can actually see how you might utilize the test clinically with patients who are on testosterone replacement therapy. And now we don't recommend that you do DUTCH testing to monitor

therapy. However, what you're going to walk away with is just how much extra information you can get from the DUTCH test to augment the monitoring you might do through serum.

00:01:42:10 - 00:01:54:23
Dr. Jaclyn Smeaton
So really cool case. I don't want to keep you waiting. Let's start to nerd out and bring Mark in. So Mark, thank you so much for joining me today to talk through this really cool case. And case report that we published.

00:01:55:03 - 00:01:56:14
Mark Newman
Absolutely.

00:01:56:16 - 00:02:17:17
Dr. Jaclyn Smeaton
So just to frame it up, we, you know, this case, if you want to read the case, it's, open access through integrative medicine, a clinicians journal or IMC j. And we published it in October of 2025. And the really interesting thing about this case, and I just want to put this out here before you really walk us through, is that we've been looking a lot at the use of testosterone.

00:02:17:17 - 00:02:54:23
Dr. Jaclyn Smeaton
Of course, we measure testosterone. We measure, other androgens and androgen metabolites on the DUTCH chest. But we've been thinking a lot about how testosterone is monitored. In fact, we have a review paper coming out quite soon on testosterone monitoring, comparing different ways that it's monitored. And one of the things that's just take finding on that is that we don't recommend DUTCH test as a primary way to monitor dosing of testosterone, but I'm excited to kind of pair that with this case report, because this case report really shows why people utilize DUTCH testing, even when it's not to monitor the hormone.

00:02:55:01 - 00:03:10:18
Dr. Jaclyn Smeaton
All of the other benefits that you can get or learnings that you can get out of the report. So hopefully I've painted a picture well enough for you to kind of jump in. Yeah. But why don't we start by just talking through the case and what we outlined. So for those of you who are you like to listen.

00:03:10:18 - 00:03:24:21
Dr. Jaclyn Smeaton
You like to see this is a great one for you to check the video of your streaming. There's just audio only. You might want to pull it up on, a streaming service with video because you're going to see the report in person, but you can also check it out in the print out. So yeah, we'll go through this case.

00:03:25:01 - 00:03:25:09
Dr. Jaclyn Smeaton
Yeah.

00:03:25:09 - 00:03:51:20
Mark Newman
It's a case, that I know fairly well because it's me. And it's also a nice case for us because we talk so much about, and rightly so, women's health and the use of the DUTCH test. We talk about HRT. A lot of the arguments about HRT circle around this issue of like, where do I want to hang my hat when it comes to doses, when it comes to, am I ready for my next dose?

00:03:51:20 - 00:04:17:01
Mark Newman
Those types of questions. And sometimes the DUTCH just is in a great position for that. And sometimes serum testing is better, as you sort of alluded to with testosterone and particularly for men. You know, did I get the pellet dose right? Do I need a new pellet? Did I get the injection dose right? Transdermal, whatever it is, serum usually is a really good way to, to monitor that.

00:04:17:03 - 00:04:43:04
Mark Newman
And we promote DUTCH test in that scenario for its complementary, like utility, like a compliment serum in that sense, which is not a rare space for DUTCH. I mean, we don't test thyroid. On the DUTCH test, but because of how much crosstalk there is between thyroid and adrenal, there are great complement to each other. So there are spaces where serum testing and urine testing can compete with each other.

00:04:43:04 - 00:05:02:04
Mark Newman
But the really the greatest utility is for people to have both of those in their toolbox.

Sometimes you need one, sometimes you need the other. When you put them together, you get, really, really interesting data. And this is one of those cases. I don't have the serum data here to share along with it, but that was something that was also being monitored.

00:05:02:06 - 00:05:33:12
Mark Newman
You know, along the way was serum, testosterone, serum, master dial. What does that look like? Some of those things. But, you know, in this case, what we have is a male patient who, doesn't have, you know, overt testosterone deficiency, but is low relative to the young, healthy range. You can see for the men. If you're not familiar with the way we represent men on the androgens, you know, in the the females, we've got the the purple band that represents the post-menopausal range.

00:05:33:12 - 00:05:54:17
Mark Newman
And then the green band that represents the luteal range. And for estradiol and progesterone, those are really well separated, which we make a big deal about. But for androgens, the biological reality is there is overlap between what's expected for a 61 year old, not cycling woman who's not on hormones, and a 26 year old woman who's cycling and young and healthy and all of that.

00:05:54:19 - 00:06:22:16
Mark Newman
There's overlap between those. And for the men, what we have is our two age groups that make up sort of similar look for the androgens, which is in this example, as you can see, is what's normal and healthy for a man who is in the age range of 40 plus, is that 25 to 80 range? And what's normal for a young, healthy man who's, you know, 20 to 40 is that range of 40 to 115.

00:06:22:16 - 00:06:46:04
Mark Newman
So you can see both of those ranges. There's a little bit of overlap in this particular case. We're just a little bit below the young healthy range, which correlates well with the serum free testosterone. So this would be like a low normal testosterone. There's a slightly elevated FPG which is again a reason why you need serum testing. As you can't you can't tell if we just have lower production.

00:06:46:04 - 00:07:04:12

Mark Newman
Or is there CPG that's gobbling up that total testosterone and leaving the free a little bit on the low side? That would be the situation here. And so when we talk about urine and testosterone or estrogen, we talk about it reflecting bioavailable hormone. I think that's a good description of what we're looking at here, which is on the lower side.

00:07:04:12 - 00:07:26:13
Mark Newman
Okay. So then as we look at the estrogens, you can see they're perfectly normal. Estradiol is right down the middle. As strong stones a little lower than that. This is somewhat unremarkable, except, the methylation is on the lower side. So as we convert two hydroxy to two methoxy, that's on the lower side. I'll show you why that is in a minute.

00:07:26:15 - 00:07:49:05
Mark Newman
But first we're going to make it worse, by adding into the picture testosterone. So when we talk about TRT, sometimes we're talking about an injection. We're talking about, you know, a transdermal, a pellet, whatever it is. In this case, we're talking about increasing endogenous testosterone. Now how can we do that? Or to main ways that I'm aware of well, I should say three.

00:07:49:08 - 00:08:07:05
Mark Newman
One is lifestyle right. Do your deadlifts and and and and get good sleep. Whatever. Someone I just was listening to someone this morning and saying taking cold plunges and then doing your workout, you can double your testosterone. Great. Like those are good conversations. Lab testing can be a great way to see, like, hey, how how well did that work?

00:08:07:07 - 00:08:24:17
Mark Newman
Fine. But when you're talking about intervention in terms of something that you're taking, you can take and Coloma within which is no. Well, you would speak way more like what's the typical use of in Oklahoma in a female as it relates to fertility. Maybe you could just describe it to normal use and then I'll describe the male use that's beside her.

00:08:24:18 - 00:08:49:05
Dr. Jaclyn Smeaton
So, you know, just to comment on the lifestyle stuff definitely is really important to handle that before you layer on exogenous testosterone. And my point of view, because a lot of things like if there's sleep disruption or sleep apnea, there are or high levels of stress, you know, you're going to have a more difficult time raising testosterone levels with external testosterone and finding patients that benefit from it.

00:08:49:09 - 00:09:04:23
Dr. Jaclyn Smeaton
So keep that in mind. So when it comes to caffeine citrate, typically you'd be looking for women they'd be using at about five days during the cycle during the time that we're stimulating follicles to develop. And you're looking at like 50mg or 100mg typically.

00:09:05:01 - 00:09:07:07
Mark Newman
And that helps them make.

00:09:07:09 - 00:09:25:18
Dr. Jaclyn Smeaton
Oh, it helps them. Well, it helps them mature follicles. So what it does, it actually blocks the feedback mechanism to the brain so that the brain does not sense that estradiol is being made by these follicles. And so then the brain turns up the volume on follicle stimulating hormone. And it essentially is a way to get FSH higher.

00:09:25:18 - 00:09:40:22
Dr. Jaclyn Smeaton
So you have a louder signal to the ovaries. So you have follicles that are kind of overproducing. Essentially it's a way to stimulate follicular development. Perfect. So it's a really nice. And there's a of course this where you're headed is that this happens in men with the testes as well.

00:09:41:00 - 00:10:00:15
Mark Newman
Right. So the signal perfect. Thank you. And then for a guy, the, if I have too much estrogen, then that's the signal that says, hey, I don't I don't need to make more testosterone. And so if you use in clumping, then it helps the body to produce LH,

which tells the testes to make testosterone. That's an option.

00:10:00:15 - 00:10:22:11
Mark Newman
Another option is to take an LH. So in clumping helps you make LH. LH is a signaling hormone but LH is a cousin or sibling or something like that. It's an analog to hCG or HCG is an analog of LH. So in this case what we did is hCG was used. So you can see the testosterone goes from 39 to 76.

00:10:22:11 - 00:10:47:07
Mark Newman
We got the expected response from the testes. And then what we see here is that oh bummer. There's too much estrogen. But this is where the urine testing is interesting is it's not just hey your dial is high. Hey your Astron is high. The way I would describe this is if estradiol and estrogen are high and things are normal downstream, then those downstream metabolites should be proportionally about as high.

00:10:47:07 - 00:11:08:01
Mark Newman
So I would expect, for example, two hydroxy E1 to be more like 678. And likewise with the other compounds. But what this is a picture of to me is I'm increasing testosterone. Aromatase is making estrogen out of it. And then it's kind of stuck. The downstream metabolism isn't really happening. Yes. You can look at the ratios of those.

00:11:08:06 - 00:11:28:08
Mark Newman
And this is on our new report. One of the advanced insights that we point people to is if you just see parent hormones high daughter hormones or metabolites not high, then there's a generalized sluggishness to that clearance. And then you can also see that the methylation has gone from what it was before, which was at the 20th percentile.

00:11:28:08 - 00:11:34:21
Mark Newman
Now that ratio has lowered. So I'm I'm about the 12th percentile. So my methylation stinks even more okay.

00:11:35:00 - 00:11:37:17

Dr. Jaclyn Smeaton
So can I talk about this a little bit on why this matters.

00:11:37:19 - 00:11:38:16
Mark Newman
Yeah.

00:11:38:18 - 00:12:01:10
Dr. Jaclyn Smeaton
So I mean here's the thing. When it comes to getting men on testosterone and this year this case, the patient took hCG. You took hCG. The same thing can happen if you're taking any kind of testosterone analog as well. So just want to highlight that and even Clomid, anything that's going to drive testosterone up, you're going to be pushing the excretion pathway, which estrogen is one way that testosterone is essentially excreted from the body.

00:12:01:10 - 00:12:33:23
Dr. Jaclyn Smeaton
You can think about it as a metabolite, you know, along that pathway for testosterone because it gets aromatase. So when when men tend to have high estrogens, it actually can feel a lot like low testosterone clinically. And so it's a really important thing to be one separating those out. And if you have patients that their testosterone is within the normal range male patients but they are feeling low libido, low energy brain fog, mood suppression, poor trouble, having trouble building muscle mass, all those things that would lead you to say this patient's classic low testosterone.

00:12:34:01 - 00:12:53:17
Dr. Jaclyn Smeaton
It's also nice to check estradiol because if testosterone is in the normal range, but estradiol is proportionately higher, you can think of it as like a male estrogen dominance. It's very difficult for men to feel better. So this is really, really important because you don't want to have a clogged metabolism or a clogged drain, in those estrogens.

00:12:53:17 - 00:13:10:19
Dr. Jaclyn Smeaton
And that goes even before we look at the impact of estrogen metabolites on DNA. This is really just the after genic piece of it. So it's a really important thing to make sure that that clearance is happening. Particularly I'd think about it in men where

they're on testosterone, but they're just not feeling the way that you would have expected them to.

00:13:10:19 - 00:13:13:19
Dr. Jaclyn Smeaton
And this is a great case when you can look at the results and see why that is.

00:13:13:19 - 00:13:32:17
Mark Newman
Yeah, no, it's a good point. So one of the strategies you can take, which is super common, is just dose an aromatase inhibitor. So, not putting any judgment on that strategy. But what I'm telling myself in that case is I'm just making too much estrogen. But if I first identify, that will hold on like your estrogen clearance stinks.

00:13:32:22 - 00:13:54:11
Mark Newman
So maybe it would be worth addressing that before you go and pharmaceutically block, the conversion of testosterone to estrogen, which you don't want to overdo, because if you have low estrogen, you're going to have other types of consequences, which we could talk about. But let's look at what happens here. And I should say what I'm doing here is because, hey, guess what?

00:13:54:13 - 00:14:12:06
Mark Newman
We own a lab so we can do a whole bunch of extra testing. I'm not proposing that at each step you necessarily intervene, test, intervene, test. Too much. But I was able to do that in this case to see how stepwise this work. Because in clinical practice, what you would probably look at here is say, hey, my methylation stunk.

00:14:12:07 - 00:14:33:06
Mark Newman
Now it's even worse. I want to address that. But what we did here is we said, let's go one step at a time. And so if you look at the next set of results, we introduced something to to increase that clearance of estrogen down that two hydroxy pathway that was sort of blocked. So you can see if I go back and forth here the two hydroxy E1.

00:14:33:08 - 00:14:53:03
Mark Newman

Well let's look at that there. The testosterone is almost identical from 76 to 75. You should not always expect that level of precision. Like biologically it's going to bounce around a little bit. These happen to be just like dead on the same. Okay then estradiol I lowered it by adding them as well as calcium D gluconate. So we'll talk about that in a second.

00:14:53:03 - 00:15:14:12
Mark Newman
But you can see the estradiol went from three all the way down to 2.1. Now 2.1 is still right at the top end of the range. And and what did I do to lower that? Two things. One, I increased the two hydroxylase ation by adding di indole methane. We've published on this, and this is one of the reasons why we like to publish a case study, because we've already published population data.

00:15:14:12 - 00:15:37:04
Mark Newman
Now that was in women. But I think we have at least three publications that have said, hey, if you have estrogen at a particular level and you increase the two hydroxylase by taking dim, it will upregulate two hydroxy one and it will pull down those parent hormones of E1, E2. That's on a population as an individual level, that doesn't happen to everybody, but it happens on the whole.

00:15:37:04 - 00:16:06:12
Mark Newman
And then on an individual level, that's, you know, the type of medicine that you're doing is, is on an end of one. And so on this end of one, you can see that my two hydroxy E1 went from 4.6 all the way up to 8.7. So a massive increase in two hydroxylase. And the other thing that we're doing here that we don't want to ignore is we're also helping the body get rid of the estrogen by way of sort of phase three, which is you have estrogen, you turn it into estradiol glucagon.

00:16:06:12 - 00:16:30:14
Mark Newman
I'd a strong glucagon. And then as it goes into the gut that gets a chance to recirculate. If that. Glueck you're on a dace happens where the gluconate turns back into the parent estrogen. And that process itself of cleaving that for recirculation is blocked by calcium D glutamate. So this product says, hey, we're going to help you get rid of the estrogen through the stool.

00:16:30:19 - 00:16:51:02
Mark Newman
And we're also going to push it down the two hydroxy pathway. So it's a two pronged approach with this product from Ortho Molecular a lot of people sell them products. I think it's a little smart. Smarter to add the calcium D glucose. Great. Because why not. If you know you have high estrogen, why not help get rid of that clearance as well?

00:16:51:04 - 00:17:13:21
Mark Newman
So estrogen comes down from out of range to barely in range for the, for dial. You can see the Astron is comfortably within range here, but, you know, maybe that's a little too high on the E2. But what we also saw is that my methylation that went from bad initially to worse, to like, what in the world is going on here?

00:17:13:21 - 00:17:16:23
Mark Newman
Terrible. I'm at the fourth percentile, so.

00:17:17:01 - 00:17:20:03
Dr. Jaclyn Smeaton
Yeah, Mark, you're good at a lot of things, but methylation is just one of them.

00:17:20:03 - 00:17:38:04
Mark Newman
Yeah. I am not a Renaissance man in terms of, being good at a lot of things if you include methylation. So and again, we'll get to the why in a minute. But what am I done here. And this was really interesting to me, is that I didn't really know how to think of methylation in the sense of place methylation that goes on everywhere.

00:17:38:05 - 00:18:06:06
Mark Newman
Right. So in my head, if I increase two hydroxylase and and I've got more estrogen, like who cares? There's methylation going on everywhere. Is it possible that I'm, I'm, I'm overloading that Comt enzyme with so much substrate that it can't methylation like my thought would be? No, but clearly, at least for me, you can see that that methylation capacity is goes way down when I increase all that substrate.

00:18:06:07 - 00:18:07:06
Mark Newman

So that's pretty interesting.

00:18:07:06 - 00:18:23:23
Dr. Jaclyn Smeaton
Yeah, it's so interesting. And so I want to like just slow it down a little bit. I mean, what we're seeing here in the kind of the let's say the pretest and then the post calcium d glue crate and dem test. Is that what one what the hCG you did get that bump in testosterone that you'd expect.

00:18:24:02 - 00:18:49:01
Dr. Jaclyn Smeaton
But with that came along a lot of estradiol and those then it clogged up the drainage system from the estradiol and really negatively impacted methylation because you just had so much more substrate that had to be methylated. And eliminated. And that's a different problem, right? Because we want to make sure there are enough methyl donors around and that the methylation capacity is sufficient.

00:18:49:06 - 00:19:11:11
Dr. Jaclyn Smeaton
And we talk about this a lot when it comes to any kind of hormone therapy. It's relevant for women who go on estradiol as well. You want to make sure the body can appropriately eliminate. Otherwise you see this screaming high estradiol that's going to impact the way that man feels. So there was another next step that you took to really help, to really focus on methylation, to keep that pathway right.

00:19:11:12 - 00:19:12:02
Dr. Jaclyn Smeaton
Moving forward.

00:19:12:07 - 00:19:33:12
Mark Newman
Right. And starting at the top again, the testosterone is pretty steady. It's from a little below 40 to mid 70s, mid 70s, mid 70s. Had all three of these steps. And then just getting that downstream picture better. So then we added in tri methyl glycine. So now I've got hCG still in the mid to high 70s for testosterone.

00:19:33:17 - 00:19:58:16
Mark Newman
My estradiol went from over three I think to 2.1. And then now down to 1.7. So I've

pulled it down lower and I'm still on the Dimm still on the calcium gluconate. But now you can see the methylation has dramatically improved by taking tri methyl glycine, which is is helping, you know, create, that methyl group so that Comt is able to do its work better.

00:19:58:18 - 00:20:23:08
Mark Newman
So now that substrate of two hydroxy one is no longer up around nine. That's pulled down as well. So you have this overall balanced picture, with what you'd call still like a high normal estradiol, but more comfortably within range and then much more appropriate phase one as well as methylation or phase two. And so you can see the stepwise individualized care there.

00:20:23:08 - 00:20:48:07
Mark Newman
And what we're trying to do is obviously have better outcomes because we want to feel well. And you're less likely to do that if you have something out of range, like an estrogen. But the other thing is just in terms of risk is if we're not methylated and estrogens and then we have too much estrogen, then, you know, if you just snooped through the literature on prostate cancer risk, for example, that's not a good combination to have there.

00:20:48:12 - 00:21:05:14
Mark Newman
Particularly if you go back to the other one, you can see that the four hydroxy one, it's within range, but it's on the higher side. So if it's on the higher side, I'm a little uncomfortable. But then I know the way I get rid of that is by methylation. So if my methylation really, really stinks, then that four hydroxy is around to do its work.

00:21:05:14 - 00:21:34:15
Mark Newman
Now that I've added in both more effective methylation as well as, you know, increasing the other detox pathways, now the four hydroxy is even more comfortably in range and I can be more confident that it's being methylated. Better because, because I'm, you know, I've increased my methylation, which if you look, you know, here what we're looking at, if you're not familiar with this is the two hydroxy, the two methoxy, we're looking at that ratio.

00:21:34:15 - 00:21:58:22

Mark Newman
And I'm just right about dead center on this one, which means I'm pretty much average. And and for me, average is great because I've got a genetic homologous snip that I think impacts methylation by about. It makes it like a third. So I've got a genetic test here. I've done a few of them, in terms of a few different interpretations of the way that's presented.

00:21:58:22 - 00:22:22:09
Mark Newman
I don't remember which one this is, but you can see that I've got the the red there says this is a problem in terms of genetics. And these are all of the ones that have to do with methylation. Now it's listed as neurotransmitter pathway because that's also how you process dopamine and epinephrine. But for the estrogen, if I'm not good at Comt activity then that's going to be a problem.

00:22:22:09 - 00:22:42:06
Mark Newman
And you can see here the the methylation activity, which is just that ratio. You can see it going from the 20th percentile. Then I increase the estrogen now to the 12th percentile. So more substrate. And then when I add the dim it just tanks it. And then now I'm bringing that back by increasing the methylation. So it's a fun little case study which I.

00:22:42:06 - 00:22:42:17
Dr. Jaclyn Smeaton
Think is.

00:22:42:17 - 00:23:05:01
Mark Newman
Very, you know, and one worth paying attention to because your individual patients, as you increase their testosterone, whether it's from a cold plunge and working out or from in clothing or from hCG or from an injection of testosterone or whatever, has the potential to have these cascading issues. And, you know, you mentioned stress and some of those things as well.

00:23:05:01 - 00:23:38:22
Mark Newman
This is the complementary benefit of the DUTCH test is to look at the HPA axis, to look at testosterone metabolism, to see how much DHT someone's making, which we

didn't show here. And then looking at that, that estrogen cascade as well is really valuable information, because if this is going to be you, in this case, me, for six months or six years, in terms of our risk for negative outcomes of many types, you know, this is these are the types of things we can do to put to put us in a better sort of risk profile.

00:23:39:00 - 00:24:08:12
DUTCH Podcast
We'll be right back with more. If you're already running DUTCH tests in your practice or thinking about it, there's never been a better time to become an official DUTCH provider. Why? Because we go beyond lab testing. Our provider community gets exclusive access to clinical education, in-depth report interpretation training, monthly case reviews, and one on one clinical support. Whether you're just getting started or looking to sharpen your functional hormone expertise, we give you the tools to grow.

00:24:08:14 - 00:24:15:21
DUTCH Podcast
Join thousands of providers already making a difference. Visit DUTCH test.com today.

00:24:15:23 - 00:24:18:14
DUTCH Podcast
Welcome back to the DUTCH podcast.

00:24:18:16 - 00:24:28:01
Dr. Jaclyn Smeaton
One thing that I'm curious about is whether you were also taking other methyl supportive nutrients at baseline or do you know, like Dr. Magnesium or were you at.

00:24:28:04 - 00:24:29:01
Mark Newman
Oh, I.

00:24:29:03 - 00:24:30:05
Dr. Jaclyn Smeaton
That you're regularly taking.

00:24:30:05 - 00:24:40:18
Mark Newman
I take magnesium regularly. And to be honest, as much as they say it helps Comt and

I'm sure it does, I've never seen it move the meter in terms of against anything.

00:24:40:18 - 00:25:01:15
Dr. Jaclyn Smeaton
You're on a baseline on no supplements tracker methylation there. But I think this is really interesting because if you have a patient that you do a baseline on and their methylation activity strained, whether it's male or female, you know you're going to be putting more estrogens into the system, whether it's through, like in this case, something to boost testosterone or whether it's through estrogen supplementation.

00:25:01:15 - 00:25:24:20
Dr. Jaclyn Smeaton
Right. Consideration of like a patient's baseline ability to go through phase one and phase two metabolism of estrogens is a really good thing to be thinking about. And in this case, I mean, you could argue that if you saw this 20% baseline methylation, you know, our team generally like when you're looking at that slider bar on a DUTCH test, there's a range.

00:25:24:20 - 00:25:44:06
Dr. Jaclyn Smeaton
It's green, that's 20 to 80, you know, as far as the population percentile, if you're below 20 or above 80 with methylation, it's really below 20 that we're worried about. That's when we would say you should intervene. So with this patient, like with this case, if someone came in the office, you could even argue that maybe you should get them on a methyl donor in step one.

00:25:44:06 - 00:26:01:22
Dr. Jaclyn Smeaton
I mean, I love that because we were able to measure each impact step by step. But from a clinical perspective, you might think, let me add dim and a methyl support right off the bat. Yeah. In order to avoid that time frame where you'd retest in and have to add more.

00:26:02:00 - 00:26:37:17
Mark Newman
Yeah. And I would have assumed before that whatever those metabolism patterns look like, that they wouldn't tend to shift around a lot as you put more hormone into the system. Right. And I was just, at least for me, was pretty wrong on on how that looked. So I think, you know, preemptive support when you're on the lower side is not

a bad idea, but it also shows that it is kind of helpful to retest after you get there, to see what the because you can feel great because of in a female's case, the estrogen in a males case, the testosterone or whatever.

00:26:37:21 - 00:26:59:20
Mark Newman
But if you have downstream things going on, one, that can mean you're not going to feel as well as you want to. But then the other thing is, is again, this risk of, you know, whether it's prostate cancer or breast cancer, like estrogen mediated cancers or whatever it is, if you're pushing down, you know, four hydroxy pathways and you're not methylated and then, you know, those are those are things worth intervention.

00:26:59:22 - 00:27:17:23
Dr. Jaclyn Smeaton
Definitely. I want to throw I want to talk a little bit about triumph of glycine, because I think people there are might be people who are listening, who are newer to that nutrient, because it's not as commonly taught in in schools and in functional medicine programs, but it's also called betaine or betaine anhydrous. And it's a really fabulous methyl donor.

00:27:17:23 - 00:27:35:11
Dr. Jaclyn Smeaton
And it's also very easy to take, like the one that you showed Mark was a powder. And it's a really nice thing to add to support methylation. And you can see here, in this case, just how effective it was at improving that phase two, metabolism there. So I want to just put a mention out there. It's essentially an amino acid.

00:27:35:11 - 00:27:51:18
Dr. Jaclyn Smeaton
But there's a nice product also by Moto Genetics. But it's a creatine powder I think it's called creatine up. Sorry I'm getting that wrong. But they include butane in it which is a nice thing if people are on creatine. Anyway, it's a nice way to get a little bit of extra boost as well. So I'm just put that that's one that I take personally.

00:27:51:18 - 00:27:59:09
Dr. Jaclyn Smeaton
I've taken it for a long time. It's like flavorless and so easy. Yeah. And it gives you a little htmg without having to add another supplement in. So a lot of good combos.

00:27:59:09 - 00:28:20:16
Mark Newman
Yeah, I think the the gym product we got from ortho, they also had a, a Htmg product, that one I liked, that it worked. The other thing in terms of TMG selection is years ago, knowing that I have crappy genetics for methylation, I took I don't even want to. I don't know if I remember the name of a product.

00:28:20:16 - 00:28:40:09
Mark Newman
I don't want to say it because I don't think it was it was, damning on my intelligence. Not on the product. Is that it was really loaded with methyl donors, I think, like Sammy and things like that. Right. But when I took it, if I walked in a room that had coffee in it, like, I would get, like, jittery, like it was it was interesting.

00:28:40:10 - 00:28:58:04
Mark Newman
I would have, like, a small coffee and I would get jittery. And I mentioned that in a lecture once, and then someone who's brighter than I am on that front, which is not difficult. And you would be way more, you know, informed on supplements and things. But, you know, we began to have this conversation about, you know, your serum.

00:28:58:04 - 00:29:17:17
Mark Newman
It still doesn't work. So if you take methyl donors in a way that's too aggressive or something like that, maybe you could shed some light on this is now I'm more easily making epinephrine, but I still can't get rid of it very well. Something like that. And I could man, I could totally feel that. But I will say on the TMG only, I did not have that experience at all.

00:29:17:21 - 00:29:26:02
Mark Newman
Separated by years. But, I think that was a smarter way. I don't quite understand that. Maybe you could unlock that a little bit. I don't understand why, but it seemed to be smarter for me.

00:29:26:04 - 00:29:52:10
Dr. Jaclyn Smeaton
I mean, the coffee jitters is a great example. I think most of us have had that

experience in that way. But I think another thing that I hear reported, what I see in this kind of same biochemistry is, you know, you have those people who they have an acute stressor, but then they recover from it quickly, whereas some other people have that same acute stress or a level of a perceived address, and it just drags and carries on and they can't reduce their heart rate, you know, they can't physically calm down.

00:29:52:10 - 00:30:03:09
Dr. Jaclyn Smeaton
They're feeling the impact of that longer, similar to like an external stimulus, like coffee, that you're getting that same prolonged epinephrine experience.

00:30:03:11 - 00:30:34:23
Mark Newman
Right. So yeah. So lots to learn from this. It was super interesting. And it was nice to get it into the peer reviewed literature. Again. We've got population data on taking estrogen, taking more estrogen, taking estrogen with them, premenopausal people on them. And what that population data looks like. But it was just kind of a fun, example to take step by step and sort of put out into the literature, for people to see kind of how that works at an individual level with the individual steps, which, again, not super practical, but super interesting.

00:30:35:01 - 00:30:58:12
Dr. Jaclyn Smeaton
Yeah. Now, I do think that there's a benefit to when you're putting a patient on testosterone. I want to kind of bring it back to that high level for our clinicians that are listening. Like when should we test? What should we be looking for? What's the. And I and I think about it not only on do they need some kind of clearance support, but I also think you can get clarification on like do they really need an aromatase inhibitor or is Jim sufficient?

00:30:58:14 - 00:31:19:03
Dr. Jaclyn Smeaton
I think those types of questions we should be asking, especially for men who are put on testosterone. And I think the DUTCH test has a really nice job of of helping to identify patients who really need to be, given testosterone paired with an aromatase inhibitor, and then men who need them. And I think most men probably need some kind of support just from the labs that I've seen.

00:31:19:03 - 00:31:26:06
Dr. Jaclyn Smeaton
But I think some men may do okay on testosterone alone without some kind of clearance support, but I think more men need it than not.

00:31:26:08 - 00:31:46:07
Mark Newman
Yeah, and I think, you know, it's a cost benefit thing. No one wants to test more than they have to. There's a cost to that, but there's also a cost. Well, it's a cost financially and biologically to taking something you don't need. So if you if you think you need them and you don't, I don't think it makes sense to take it.

00:31:46:09 - 00:32:03:17
Mark Newman
So it's nice to test and see that, I will say in terms of aromatase inhibition, which we see a lot of and I'm not rendering judgment on that. Just sometimes people don't need it is I took it I got a prescription from my doctor, just sort of for fun to see what it would look like on that.

00:32:03:17 - 00:32:23:15
Mark Newman
And so I took it for like two days. And that that drug, that 1.7 estradiol, that's the thing that pulled it back to sort of its baseline value. So you you can take that for what it's worth, knowing herbs and supplements and things like that are powerful. But pharmaceutical intervention, you know, usually can't be matched that way.

00:32:23:15 - 00:32:46:23
Mark Newman
And that is a two edged sword, right? You don't want to overdo lowering your estrogen. You don't want to take chemicals. You don't need. And even even things like them, you know, we urge caution on that because if you two hydroxylase things like poly aromatic hydrocarbons and toxins and things, they get more toxic. So you don't want to just shove something at everybody.

00:32:47:00 - 00:33:04:03
Mark Newman
Most of the time, I live near Portland. We want to show vitamin D, probably towards everybody this time of year. But for the most part, you know, we don't want to give testosterone to everyone unless they need it. We don't, you know, on and on it goes,

throughout the whole sort of cascade of things that are possible.

00:33:04:03 - 00:33:16:09
Mark Newman
And that's, I think, the value of testing and a test like ours that looks more deeply into, you know, what the hormone levels look like, as well as what your body's doing with it.

00:33:16:09 - 00:33:34:02
Dr. Jaclyn Smeaton
So definitely now just the kind of in final closure here. If if practitioners are listening and they have they're putting men or even women on testosterone therapy. Can you describe what you'd recommend from a timing person. Sure. Like do they always need to do a baseline? And if not, how do you know when to do it and when to not do it?

00:33:34:02 - 00:33:36:15
Dr. Jaclyn Smeaton
And then how long into therapy should they do the retest?

00:33:36:20 - 00:33:41:17
Mark Newman
Yeah. It's a good question. Not a one size fits all.

00:33:41:19 - 00:33:42:10
Dr. Jaclyn Smeaton
Of course.

00:33:42:12 - 00:34:13:16
Mark Newman
So if I, if I have a serum value and I have symptoms that overlay. Well, and I know I'm heading down a testosterone path, whether it's giving DHEA to a woman, giving testosterone to a woman, giving HCG, testosterone or whatever that is, you don't have to necessarily do a DUTCH test to complement that. It's. I mean, I think it really, really helps to complement it, but you don't necessarily want to fire that bullet three times because that gets expensive.

00:34:13:18 - 00:34:44:19
Mark Newman

I think in some cases, if money's not as much of an issue, it is really nice to test before, because if you test before and the guy has some interesting metabolism or his cortisol is going crazy, you got to know you're not going to succeed with that guy until you address those issues. Having said that, if you get the testosterone up and you go sort of snooping, doing the snooping of that sort later, once the testosterone is up and seeing the impact of that, that can be a reasonable strategy as well.

00:34:44:23 - 00:35:15:00
Mark Newman
You're just going to intervene on some of those things late. Like for me, I could have hit methylation early, why wouldn't I? That was only going to help it to be more effective. But the dim peace was not evident until we added in the, the, the extra testosterone production. So but in terms of timing, once you're on therapy, you know, I, I like the combination of using a serum test when I think I need another dose, meaning how low do I get?

00:35:15:05 - 00:35:32:06
Mark Newman
So when I'm ready for pellet insertion or at the tail end of my injection, whatever it is. And I like the idea of using urine at the midway point. So pellets is the easiest one because it's so stinking long, right? So if you have a pellet every what is it, three months? Four months, let's just say for next month.

00:35:32:06 - 00:35:54:00
Mark Newman
Easy. At four months. At two months, I like the idea of this is not the max, but this is a hefty value of testosterone where I'm going to see how much estrogen I'm making and all of that. You'd miss that if you waited till the nadir at that low point. So on an injection thing like midway between the doses, I think makes a lot of sense.

00:35:54:02 - 00:36:23:20
Mark Newman
And I think there's always added value of doing it before and after. And I think as long as you have really clear picture of the fact that it's a necessary treatment based on the serum result, then, then I think doing it after the fact, like in a woman and looking at five alpha metabolism is pretty nice, because if you're going to give her something that's going to then turn into a whole bunch of DHT, I'd like to know that beforehand, because you're going to get some negative effects on.

00:36:23:20 - 00:36:42:19
Dr. Jaclyn Smeaton
Let's talk a bit more about androgen symptoms. Yeah, a ton of women are taking testosterone. It's like being talked about it's still off label, so it's not FDA approved. However a lot of women are utilizing it. It's FDA approved for low libido, but that's it really. So yeah. And women are using it for a variety of other symptoms is being prescribed.

00:36:42:19 - 00:37:08:00
Dr. Jaclyn Smeaton
And, and what I'm seeing is typically a T gel. Right. So sometimes pellet therapy. But I think the T gel is an easy way. Or like the Android gel to apply it regular basis are using one tenth the dose for men. And that's what I'm seeing most typically prescribed. When I took that Harvard course, Women's Health course, which just happened again this year, they did the cover that again, like it's being taught at all the institutions for women.

00:37:08:02 - 00:37:28:19
Dr. Jaclyn Smeaton
So what we're talking about here is like some women, men, one, women have a lot of fear about testosterone, I think, because they're afraid of turning into a man ultimately growing hair in the wrong places, getting acne, those androgenic symptoms. And so those are kind of undesirable side effects. And and we know that we can look at metabolites when it comes to androgens.

00:37:28:19 - 00:37:51:11
Dr. Jaclyn Smeaton
Metabolites are actually stronger than that parent hormone. So we can see people's preference on whether they're more likely to make more of that or an average amount of that or less of that. And you can look at that ahead of time with endogenously produced androgens and really get an idea of is that five or that, you know, one tenth dose that little pieces is going to be sufficient or are they gonna need more or are they gonna need less?

00:37:51:12 - 00:38:22:12
Mark Newman
Right. Yeah. I think your your actual levels matter, which you can grab in serum or you can grab, you know, from a DUTCH test. And then what your body does with it is, as you said, particularly important for testosterone because DHT is 3 to 4 times as

potent as testosterone. So you could have a woman with the same testosterone dose, same testosterone level that based on whether she's a five alpha pusher or a phi beta pusher, which is non androgenic, you could really have a three times difference in terms of dose of the DHT going on at the tissue level.

00:38:22:17 - 00:38:42:00
Mark Newman
And that's why we like to look at five alpha and resting dial. That's why we pulled it to the front page of our report is looking at those levels, looking at the five alpha preference, you know, which then relates to insulin sensitivity. You know, you keep putting the picture together more comprehensively, but knowing that going in can be really helpful.

00:38:42:02 - 00:38:54:07
Mark Newman
You know, if you're going to wait 3 or 4 months, I mean, I to be honest with you, I don't know how long it takes a woman who's got too much DHT to get acne and facial hair growth and that sort of thing, but it's a pretty good way to have a former client instead of a client, if you get that wrong.

00:38:54:07 - 00:38:58:08
Mark Newman
It's a good point. And because it's not like you can reverse that in five minutes, you know?

00:38:58:09 - 00:39:22:14
Dr. Jaclyn Smeaton
Right. Yeah. That's that takes a long time to reverse. Now, I think the one other thing that I wanted to point out around that if you're utilizing a transdermal testosterone, is that you're going to have like an up and down pattern pharmacokinetics with that daily application. And so I think when you're looking at injections, which last days, or you look at a pellet which last months, you can measure midway and get a pretty steady stream.

00:39:22:14 - 00:39:42:18
Dr. Jaclyn Smeaton
But I just I think about and we don't recommend utilizing the DUTCH test for monitoring dosing of testosterone because serum is great, but is that different in the transdermal world because of an up and down pharmacokinetic pattern where like a

four spot urine test would be advantageous.

00:39:42:18 - 00:40:03:04
Mark Newman
I think we could oversell what we do a little bit with that, because the pattern's actually not bad. And that's in contrast to estrogen. Like that's one of the reasons why serum kind of stinks for estrogen creams and gels is because you can take your cream or gel and you can hit a number in serum of, say, 80 or whatever.

00:40:03:06 - 00:40:25:12
Mark Newman
And then you can also hit a number of 15 and you don't know which number you're going to get depending on the timing, because it's really individualized. And it's it's not even the same necessarily from day to day, depending on, you know, all kinds of variables, meaning the up and down pattern is a real problem for serum with estrogen when it's not a patch and it's a cream or a gel, and with testosterone, it seems to be pretty steady.

00:40:25:16 - 00:40:38:00
Mark Newman
So you can get a decent value that you can hang your hat on. Which is a pretty good segue. Into the publication that we've got, you know, I think you just.

00:40:38:00 - 00:40:39:13
Dr. Jaclyn Smeaton
Provided exactly the info I was hoping.

00:40:39:13 - 00:41:02:01
Mark Newman
In these next couple weeks, because we went and looked and we said, hey, how well does the serum dance with this clinical picture of all of the things that happen when you're on testosterone? Because there is a fair amount? Well, I should say, in the allopathic community, there's almost no confusion on this topic, but they might be confused on other aspects of HRT and sometimes like significantly so.

00:41:02:02 - 00:41:36:07
Mark Newman
But in the functional medicine space, where there's been such a history of pro saliva education, not generally, but as it relates to monitoring hormone creams and gels

where those values are exaggerated above serum. You know, we did a deep dive into that and looked at every study we could find to see whether the serum values seem to match up very consistently with those clinical outcomes, and then contrasted that with urine, with saliva, but particularly with saliva, and also looked at dried blood spots and urine a little bit.

00:41:36:07 - 00:42:06:20
Mark Newman
But that is going to be an exciting publication for about, I think, super helpful for people that just systematically walk through the data. And then we also published some original research within that review, which was looking at, saliva values as they go up in women when you're on therapy, meaning looking at hundreds of women that are at normal levels, elevated values and then super elevated values, do their high androgen symptoms track with that?

00:42:06:22 - 00:42:24:18
Mark Newman
And, you know, as it turns out, which is what we've seen before in the literature, but not actually there's not that much on that particular point in the literature is there was no correlation between how high the saliva value was and a woman's likelihood of saying, hey, I've got, acne, facial hair, thinning scalp or that sort.

00:42:24:18 - 00:42:42:15
Dr. Jaclyn Smeaton
Of thing, right? Yeah. I mean, we'll spend time on the pad breaking that down. So we are going to be talking about that later once that paper is out and you guys can look at it. Because I do think that it's really interesting, particularly if you've been utilizing saliva, for monitoring testosterone therapy, which, like you said, we see in the conventional world.

00:42:42:15 - 00:43:08:10
Dr. Jaclyn Smeaton
In fact, one of the reviewers commented that no one does that. So it but as we see in the functional medicine space, people do. So it really and I think this just leans on as, you know, DUTCH's approach to health care and science and hormones, which is that we want to look to the literature, you know, we want to be part of the evidence base and like, have our data subjected to peer review because we want to make sure that we're leading clinicians down the right conclusion.

00:43:08:15 - 00:43:44:02
Dr. Jaclyn Smeaton
But I think it's also a time where a lot of, integrative medicine, like we've we've been handed down information from our elders, and that oftentimes came from clinical observation. A lot of times we got it right, like I think about probiotics or a leaky gut syndrome, which was kind of that classic case. Now we know that gut hyper permeability predisposes to things like autoimmunity, like we have the scientific connections, but it's our job to be constantly reevaluating the inherited knowledge through evidence wherever possible.

00:43:44:02 - 00:44:03:04
Dr. Jaclyn Smeaton
And I think really that's where we took this approach with this paper. We didn't we didn't go into it thinking, let's prove urine is the best because we just don't feel that way based upon what we know. We think serum is the best, but instead, let's look at the evidence that's out there for the other means that are being utilized in integrative medicine, because maybe we can help people improve their practices.

00:44:03:10 - 00:44:28:14
Mark Newman
Yeah. And specifically for testosterone therapy, serum seems to track best with, the clinical data. And, and, you know, as we've said, I think our, our position is that a urine test makes a very nice complementary product for that. And then when you shift into the estrogen, then it gets really interesting because, because that up and down pattern in serum is so fast.

00:44:28:16 - 00:44:46:23
Mark Newman
The urine may actually be a better option for the primary question of did I get the dose right? And then also was interesting in the in a complementary sense of looking at HPA axis, looking at phase one estrogen metabolism, methylation, and so forth. And there's still a lot of research that needs to be done on that question of dosing and testing.

00:44:46:23 - 00:45:16:14
Mark Newman
And because that's a that's a big question. So what we wanted to do in this most recent publication that's coming out like tomorrow ish, is really look at the data on like what, what we can push forward with and learn more about and what we need to

leave behind. And that's that's an area where I think our, our industry, serves itself well by leaving that model behind, that says these high values in saliva have clinical utility in that context.

00:45:16:14 - 00:45:37:04
Mark Newman
And I don't think it's actually that prevalent for testosterone. Some our industry has seemed to have said just pragmatically, like, what doesn't really work? But then they lean more into that on the estrogen side of it. The reason we started with testosterone, in terms of the publication is just there is a lot of data, clinical data that says, hey, we can put this model.

00:45:37:06 - 00:45:58:20
Mark Newman
And I don't mean this single model serum, saliva, urine and blood spot. And I started to really think about that, that I think we spend too much time saying which test is better. And I think it's a it's a better mental process to take a test and say, am I better having this value or having nothing when it comes to that question of dosage adjustment?

00:45:58:22 - 00:46:19:17
Mark Newman
And there are certain situations. Anyways, I think that's a better way to ask that question. It's not about, you know, market share and who's doing saliva testing and urine and whatever. It's it really just needs isolated to. And I think in this case, what we showed is having a saliva value when you're on topical testosterone, is more prone to pull you in a direction, that's misleading than it is to be helpful.

00:46:19:17 - 00:46:39:18
Mark Newman
And it's probably better. You're probably better off having nothing than having that value. And so I think going through that mental exercise of looking at those studies, and finding that there really aren't any studies that the key finding is, can you find a study where what happens clinically exceeds what you would predict what happened just by looking at the serum results.

00:46:39:21 - 00:47:05:15
Mark Newman
So you see the serum goes up and then you see, oh here are the things that happen.

We don't see any, any studies that we could find. Or we said, well, the serum value didn't really move, but man, the bone, the bones improve or the sexual function improve or whatever it is they seem to dance together like, relatively well and consistently across every parameter that we could find that's been studied, which, again, is most robust for, testosterone.

00:47:05:21 - 00:47:27:19
Mark Newman
But when you start digging into estrogen, you find a parallel case. It just all you've got there are hot flashes, vaginal atrophy and and bone mineral density. You don't have this this whole bigger list, but it still paints a, you know, a fairly consistent, picture. But it's a confusing one and one that hasn't been laid out in the literature, which is why we chose to start with testosterone and do that as thoroughly as we could.

00:47:27:21 - 00:47:53:15
Dr. Jaclyn Smeaton
I want to end with just a funny story, because, you know, I think this is something that speaks to why this topic is important. And, you know, the the reason that I really like working with DUTCH is the desire to get things right scientifically. And, one of the things that I'll just never forget, thankfully, you still hired me was when I came in to kind of interview for the job, one of the first questions I asked, which I realize now what a dumb question that was.

00:47:53:16 - 00:47:54:16
Dr. Jaclyn Smeaton
But thanks for giving me the grace.

00:47:54:16 - 00:47:57:07
Mark Newman
So anyway, you're going with this. So this is memory lane, so go ahead.

00:47:57:11 - 00:48:14:07
Dr. Jaclyn Smeaton
Oh, good. Right. I'm stuck in my brain. I'm glad you forgot it. But I remember we were sitting outside the picnic table and I said, hey, Mark, you know, have you ever thought about, like. Or why are you not offering salivary testing for reproductive hormones? Because you have the capacity. You already collect the saliva to measure cortisol. You have all the equipment in the lab.

00:48:14:07 - 00:48:32:14
Dr. Jaclyn Smeaton
You're processing the samples. Like, don't you realize that there's a market equal to the size of the urine testing out there for saliva? And you said, well, because I don't want to mislead people. You know, I was like, okay, that's I have some learning to do. And that's a pretty good reason to not do it. But I just think that's really important.

00:48:32:14 - 00:48:50:23
Dr. Jaclyn Smeaton
Like, I know that and you can you've gotten into this before and when we released the paper, I wrote a piece to kind of about this transition for you is it's our responsibility to reevaluate science. It's our client. It's clinician's responsibility to be constantly reevaluating science and the body of evidence, and to make decisions that are in the best interests of our patients.

00:48:50:23 - 00:49:08:07
Dr. Jaclyn Smeaton
And so I think it just brings me back to that in integrative medicine, if you're doing something because you were taught to do that and you don't verify that, that's the best way. We all want to trust our teachers, but we should be checking to make sure we're doing the right thing. And I think when things come up that are questioned, it's okay.

00:49:08:07 - 00:49:24:02
Dr. Jaclyn Smeaton
There's a lot in science that we don't know. It's okay to say we don't know or we don't have enough data. We need to get more data to really answer that question. But one thing you mentioned is that there are some things it's hard to prove something is true, but it's easier to prove that something is not true.

00:49:24:04 - 00:49:27:07
Dr. Jaclyn Smeaton
Yeah. With with data and science. And I think this is one of those cases.

00:49:27:09 - 00:49:53:00
Mark Newman
Yeah. I think yeah. Just in our world today like really nailing down what is absolutely true, on a host of topics can be rather difficult. But our, our quest for that is so much easier if we can take ideas where we can fairly conclusively say, okay, this model

doesn't work very well. And I think that's a space for us to help educate in, and it's hard to not be biased in those conversations.

00:49:53:00 - 00:50:14:04
Mark Newman
And I think each test has its purposes, but these topics get so confusing because, you know, with saliva testing, like there are also differences in methodologies. So if you say does saliva work for a baseline test, well, we like urine because we get all this metabolite information. But for the hormones itself particular for cortisol of course. That's why we use it.

00:50:14:06 - 00:50:36:08
Mark Newman
You know, that's also hugely method dependent that it depends on, you know, doing accurate testing is really important. But then because it's so misapplied to the HRT scenarios, I think you, you it's hard to not mislead people on that without this reeducation process that I think we're still sort of in the middle of as an industry. So, it keeps it interesting.

00:50:36:10 - 00:50:53:05
Mark Newman
But we've got a lot of work to do, to continue finding out what is true. And how do you know, like, when to best leverage saliva testing, when to best leverage urine testing and serum. And I think, you know, a combination of those in a lot of cases really gives you, you know, a great place to make really good decisions.

00:50:53:05 - 00:50:53:14
Mark Newman
So.

00:50:53:18 - 00:51:14:04
Dr. Jaclyn Smeaton
Right. Definitely. And I mean, so if you anyway, if you have questions around this, reach out to us at DUTCH because we love to talk about it. And, and we'd love to hear from you. But, Mark, I really appreciate you joining me today on the pod. And again, you guys can visit DUTCH slash research. And right now we're featuring this IMC J case study right on that page.

00:51:14:09 - 00:51:20:23

Dr. Jaclyn Smeaton
So you can click if you want to read the case study, we have a synopsis of it. And on the blog. And then we you can link to the full PDF there if you're.

00:51:21:00 - 00:51:37:10
Mark Newman
And you're a coauthor. So thank you for your help with it and for discussing the topic. It's I think it's super interesting and, excited for everyone to see, the other publication and publications that we have, rolling out as well, because I think those are going to create some, some great conversations.

00:51:37:12 - 00:51:40:05
Dr. Jaclyn Smeaton
Totally agree. Thank you guys.

00:51:40:06 - 00:51:53:00
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